

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An etching solution ~~comprised of~~ comprising a solution ~~of based-on~~ cupric chloride and [[a]] at least one triazole type compound added to the cupric chloride solution.

Claim 2 (Currently Amended): The etching solution ~~according to~~ of claim 1, wherein the at least one triazole type compound is ~~at least one~~ selected from ~~among the group~~ consisting of benzotriazole (BTA), [[BTA]] ~~benzotriazole~~-COOH and tolyl triazole (TTA).

Claim 3 (Currently Amended): The etching solution according to claim 1, wherein the concentration of the at least one triazole type compound is over 1000 ppm and under 3000 ppm.

Claim 4 (Currently Amended): The etching solution according to claim 1, wherein the concentration of the at least one triazole type compound is in a range of ~~from~~ 1200 to 2500 ppm.

Claim 5 (Currently Amended): The etching solution ~~of according to any one of claims 1 to 4~~ claim 1, containing further comprising at least either one amphoteric surface active agent or at least one anionic surface active agent.

Claim 6 (Currently Amended): The etching solution ~~according to~~ of claim 5 claim 1, wherein the further comprising at least one amphoteric surface active agent is ~~at least one~~ selected from ~~among the group~~ consisting of carboxy betaine type alkyl betaine [[()]]

alkyldimethyl betaine aminoacetate, alkyldimethyl betaine acetate, alkyldimethyl carboxymethyl betaine, alkyldimethyl carboxymethylene ammonium betaine, and alklydimethyl ammoniumacetate[[(), and fatty amide propyl betaine (fatty amide propyl dimethyl betaine aminoacetate, alkyl amide propyl betaine, alkyloyl amide propyl dimethyl glycine, alkanoyl aminopropyl dimethyl ammonium acetate, palm oil fatty amide propyl betaine and palm oil fatty amide propyl dimethyl betaine aminoacetate[()]]].

Claim 7 (Currently Amended): The etching solution according to claim 5, wherein the further comprising at least one anionic surface active agent is at least one selected from among alcohol ethoxylate [AE] (the group consisting of polyoxyethylene alkyl ether, and alkyl polyoxyethylene ether[()]), polyoxyethylene, [[()polyoxyethylene polyoxypropylene[()]], polyoxypropylene glycol, [[()polyoxyethylene polyoxypropylene glycol ether, polypropylene glycol polyethylene glycol ether, and polyoxyalkylene block polymer[()]], Fatty polyethylene glycol (acyl polyethylene glycol, polyethylene glycol fatty acid ester, polyoxyethylene glycol fatty acid ester, PEG fatty acid ester, polyoxyethylene alkanoate, alkanoate and alkyl carbonyl oxypolyoxyethylene,) and fatty polyoxyethylene sorbitan [[()acyl polyoxyethylene sorbitan, polyoxyethylene sorbitan [mono-tri], alkanoate, polyoxyethylene hexythane fatty acid ester, and sorbitan fatty acid fatty acid ester polyethylene glycol ether and POE sorbitan [mono-tri] fatty acid ester [poly sorbate]]).

Claim 8 (Currently Amended): The etching solution according to claim 5, wherein the concentration of the at least one amphoteric surface active agent or the at least one anionic surface active agent is within a range of ranges from 2000 to 11000 ppm.

Claim 9 (Currently Amended): The etching solution ~~according to~~ of claim 5, wherein the concentration of the at least one amphoteric surface active agent or the at least one anionic surface active agent is within a range of ranges from 4000 to 9700 ppm.

Claim 10 (Currently Amended): A ~~An~~ etching method of etching exposed parts of a copper layer, wherein parts of the copper layer are coated with an etching resist having a predetermined pattern, wherein the parts of the copper layer not coated with the etching resist are exposed, using an etching solution, comprising wherein:

applying, to parts of the copper layer exposed between traces of the etching resist pattern, an etching solution comprising a solution comprising cupric chloride and at least one triazole type compound to etch the exposed parts of the copper layer;

wherein an inhibiting coating is selectively formed on the parts of the copper layer coated with the etching resist

~~an etching solution or etching solution droplet comprised of a solution based on cupric chloride and a triazole type compound added to the cupric chloride solution is supplied to parts of the copper layer exposed between traces of the etching resist pattern; and~~

~~the copper layer parts not covered with the etching resist are etched while an etching inhibiting coating is selectively formed on the copper layer part laid under edges of the etching resist.~~

Claim 11 (Currently Amended): An etching method of etching a copper layer coated with an etching resist having a predetermined pattern using an etching solution, wherein an etching solution comprised of a solution based on cupric chloride and a triazole type compound and at least either amphoteric or anionic surface active agent added to the cupric chloride solution is supplied to parts of the copper layer exposed between traces of the

~~etching resist pattern, and the copper layer parts not covered with the etching resist are etched while an etching inhibiting coating is selectively formed on the copper layer part laid under the edge of the etching resist~~ The method of claim 10, wherein the etching solution further comprises at least one amphoteric surface active agent or at least one anionic surface active agent.

Claim 12 (Currently Amended): The etching method according to claim 10, wherein the at least one triazole type compound is ~~at least one~~ selected from among the group consisting of benzotriazole (BTA), BTA-COOH benzotriazole-COOH and tolyl triazole (TTA).

Claim 13 (Currently Amended): The etching method according to claim 10, wherein the concentration of the at least one triazole type compound is over 1000 ppm and under 3000 ppm.

Claim 14 (Currently Amended): The etching method according to claim 10, wherein the concentration of the at least one triazole type compound is in a range of 1200 to 2500 ppm.

Claim 15 (Currently Amended): The etching method ~~according to of claim 10, claim 11, wherein the etching solution further comprises at least one amphoteric surface active agent is at least one selected from the group consisting of among carboxy betaine type alkyl betaine (alkyldimethyl betaine aminoacetate, alkyldimethyl betaine acetate, alkyldimethyl carboxymethyl betaine, alkyldimethyl carboxymethylene ammonium betaine, and alklydimethyl ammoniumacetate[()]], and fatty amide propyl betaine (fatty amide propyl~~

dimethyl betaine aminoacetate, alkyl amide propyl betaine, alkyloyl amide propyl dimethyl glycine, alkanoyl aminopropyl dimethyl ammonium acetate, palm oil fatty amide propyl betaine and palm oil fatty amide propyl dimethyl betaine aminoacetate[[]]).

Claim 16 (Currently Amended): The etching method ~~according to of claim 10 claim 11, wherein the further comprising at least one anionic surface active agent is at least one selected from among alcohol ethoxylate [AE] (the group consisting of polyoxyethylene alkyl ether, and alkyl polyoxyethylene ether[[]]), polyoxyethylene, [[()]]polyoxyethylene polyoxypropylene[[]]], polyoxypropylene glycol, [[()]]polyoxyethylene polyoxypropylene glycol ether, polypropylene glycol polyethylene glycol ether, and polyoxyalkylene block polymer[[]]], Fatty polyethylene glycol (acyl polyethylene glycol, polyethylene glycol fatty acid ester, polyoxyethylene glycol fatty acid ester, PEG fatty acid ester, polyoxyethylene alkanoate, [alkanoate] and alkyl carbonyl oxypolyoxyethylene,) and fatty polyoxyethylene sorbitan (acyl polyoxyethylene sorbitan, polyoxyethylene sorbitan [mono—tri], alkanoate , polyoxyethylene hexythane fatty acid ester, and sorbitan fatty acid fatty acid ester polyethylene glycol ether ~~and POE sorbitan [mono—tri] fatty acid ester [polyserbate]~~)).~~

Claim 17 (Currently Amended): The etching method ~~according to of claim 11, wherein the concentration of the at least one amphoteric surface active agent or the at least one anionic surface active agent is within a range of ranges from 2000 to 11000 ppm.~~

Claim 18 (Currently Amended): The etching solution according to claim 11, wherein the concentration of the ~~at least one amphoteric surface active agent or the at least one anionic surface active agent is within a range of ranges from 4000 to 9700 ppm.~~

Claim 19 (Currently Amended): A printed wiring board having a circuit pattern formed by the etching method ~~according to any one of claims 10 to 18 of claim 11~~, wherein on the side wall of the circuit pattern, there are formed nonuniform irregularities having a shape and size that depend upon the concentration of the at least one triazole type compound added to the etching solution, the concentration of the surface active agent or spray pressure of the etching solution.

Claim 20 (Original): The printed wiring board according to claim 19, wherein the nonuniform irregularities are comprised of primary depressions including many convexities extending irregularly from the surface of the circuit pattern toward the surface of a substrate and concavities existing between the convexities, and secondary depressions including smaller irregularities existing between the concavities and convexities included in the primary depressions.

Claim 21 (Currently Amended): The printed wiring board according to claim 20, wherein:

~~the pitch of~~ the primary depressions comprise a pitch of from [[is]] 5 to 20 μm; and
~~the depth of~~ wherein the primary depressions comprise a depth of from [[is]] 5 to 15
μm.

Claim 22 (Currently Amended): The printed wiring board according to claim 20,
wherein the primary and secondary depressions comprise a depth, and wherein the depth of
the secondary depressions is 1/10 to 1/2 of the depth of the primary depressions.